

REMARKS

The specification has been amended. Support for the amendments to the specification can be found at least in original Claims 39, 40, 44 and 45. Claims 1, 4, 5, 6, 8, 9, 11, 15, 16, 18, 19, 20, 21, 27, 29, 30, 41, 42 and 44 have been amended. Support for the amendments to these claims can be found at least in the corresponding original claims. Claims 7, 12 and 13 have been canceled. No new matter has been added and entry is respectfully requested.

After entry of the above amendments, Claims 1-6, 8-11 and 14-45 are pending. Claims 34-38 have been withdrawn from consideration.

Response to Restriction Requirement

Election of one of the following groups has been required:

Group I, Claims 1-33 and 39-45, drawn to a method of detecting chemiluminescent emissions on a solid support; and

Group II, Claims 34-38, drawn to a composition comprising first and second chemiluminescent substrates.

In responding to the restriction requirement, applicants previously elected, with traverse, Group I, Claims 1-33 and 39-45.

An election of a species has also been required. In responding to the election of species requirement, Applicants previously elected, also with traverse, the species “nucleic acid” as the type of target molecule and probe molecule. This election is being made with the understanding that, upon allowance of a generic claim, Applicants will be entitled to consideration of claims to additional species which depend from or otherwise require all of the limitations of an allowable generic claim (37 CFR §1.141).

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The above election was made with traverse. In particular, Applicants respectfully submit that the search and examination of all currently pending claims would not pose an undue burden on the Examiner. Section 803 of the Manual of Patent Examining Procedure states that “[i]f the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.” In view of the above, Applicants respectfully request examination of all currently pending claims.

In responding to the restriction/election of species requirement, the Applicants take no position regarding whether the claims of the various groups and species identified in the Official Action define distinct inventions.

Specification Objection

The specification was objected to for allegedly failing to provide “proper antecedent basis” for the subject matter of original Claims 39, 40 and 44 (page 7 of the Official Action). The specification has been amended to include support for these claims. Reconsideration and withdrawal of this objection is therefore respectfully requested.

Claim Objections

The claims have been objected to for various informalities (pages 7-8 of the Official Action). It is respectfully submitted that the amendments to the claims have addressed each of the objections. Reconsideration and withdrawal of these objections is therefore respectfully requested.

Claim Rejections under 35 U.S.C. §112

The claims have been rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite (pages 8-10 of the Official Action). Each of these rejections is

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respectfully traversed. In particular, it is respectfully submitted that the amendments to the claims have addressed each of these rejections. Reconsideration and withdrawal of these rejections is therefore respectfully requested.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 1, 2, 3-7, 9-26, and 28-32, 39-40 and 44-45 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,931,223 to Bronstein (hereinafter referred to as “Bronstein”) in view of U.S. Patent No. 6,309,822 B1 to Fodor et al. (hereinafter referred to as “Fodor”) (page 11 of the Official Action). Claim 1, 9-10, 23-26, 28-29, and 32-33 have also been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.K. Patent Application No. GB 2 246 197 A to Bers, et al. (hereinafter referred to as “Bers”) in view of Fodor (page 21 of the Official Action). Each of the above rejections is respectfully traversed.

With respect to Claim 1, each of the above rejections relies upon the alleged disclosure in Fodor of assay methods employing “chemiluminescent detection” and “enzyme labels” (see, for example, page 13 and page 23 of the Official Action). In particular, the Official Action asserts that Fodor “teach that microarrays may be used in methods employing chemiluminescent detection (column 49, lines 5-12, column 82, lines 43-65) and also that enzyme labels may be used (column 20, lines 51-61)” (page 13 and page 23 of the Official Action). Claim 1, however, recites contacting a surface layer of a support with a substrate composition comprising first and second chemiluminescent substrates wherein a plurality of probes are immobilized on the surface layer and at least some of the probes are bound to enzyme conjugates comprising enzymes capable of activating the first and second substrates. Accordingly, in Claim 1 an enzyme labeled

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target is immobilized on the support surface. In contrast, the portions of Fodor relied upon in the Official Action disclose labeling *target molecules* with “chemilumescers”. In particular, the first disclosure in Fodor relied upon in the Official Action discloses that “suitable *labels* include . . . chemilumescers . . .” (*emphasis added*, column 49, lines 6-10 of Fodor). In addition, the second disclosure in Fodor relied upon in the Official Action is in a section of the patent entitled “A. Labeling Techniques” where Fodor discloses that “[d]etectable signal may also be provided by chemiluminescent . . . sources” (column 81, line 16 and column 82, lines 43-44 of Fodor). Accordingly, it is respectfully submitted that the disclosures in Fodor relied upon in the Official Action are clearly directed to *chemiluminescent labels* and not to the use of enzyme labels with chemiluminescent substrates as set forth in Claim 1. Accordingly, one of ordinary skill in the art would not arrived at the invention defined by Claim 1 by combining the Bronstein and Bers references with Fodor as set forth in the Official Action. Further, it is respectfully submitted that one of ordinary skill in the art would not been motivated to modify the combined teachings of these references to arrive at the claimed invention. In particular, as set forth in the specification, migration of the chemiluminescent species can occur during assays involving enzyme labels and chemiluminescent substrates since the activated substrate is not attached to the support during the assay (page 2 of the specification). Therefore, one of ordinary skill in the art would have reasonably expected the chemiluminescent species to migrate during the assay thereby reducing the spatial resolution and resulting in inaccurate assay data. Accordingly, one of ordinary skill in the art would not have had a reasonable expectation that the proposed modification would be successful, particularly at the densities recited in Claim 1 (i.e., at least 50 per cm²). In

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view of the above, it is respectfully submitted that Claim 1 is patentable over the cited references.

The rejections of the remaining claims rely upon the aforementioned combinations of each of the Bronstein and Bers references with Fodor as applied to Claim 1. As set forth above, these proposed combinations do not render the subject matter of Claim 1 obvious. Accordingly, it is respectfully submitted that the remaining claims are also patentable over the cited references.

In view of the above, reconsideration and withdrawal of each of the outstanding rejections under 35 U.S.C. §103(a) is therefore respectfully requested.

Double Patenting Rejection

Claims 1-33 and 39-45 have been provisionally rejected on the grounds of non-statutory obviousness-type double patenting as allegedly being unpatentable over Claims 1, 3-10, 13-19 and 21-45 of copending U.S. Patent Application Serial No. 10/620,332 in view of Bronstein et al. (pages 24-26 of the Official Action). Claims 1-33 and 39-45 have also been provisionally rejected on the grounds of non-statutory obviousness-type double patenting as allegedly being unpatentable over Claims 28-47 of copending U.S. Patent Application Serial No. 10/462,742 in view of U.S. Patent No. 6,068,979 to Akhavan-Tafti and Bronstein et al. (pages 26-27 of the Official Action). Each of these rejections is respectfully traversed.

Submitted herewith is a Terminal Disclaimer over copending U.S. Patent Application No. 10/620,332 and U.S. Patent Application Serial No. 10/462,742. As set forth in the Official Action, “[a] timely filed terminal disclaimer in compliance with 37 C.F.R. 1.321(c) or 1.321(d) may be used to overcome an actual or provisional double

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patenting rejection based on a nonstatutory double patenting ground” (Page 24 of the Official Action). Accordingly, reconsideration and withdrawal of each of the above rejections is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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